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Plain or Choice Cattle?

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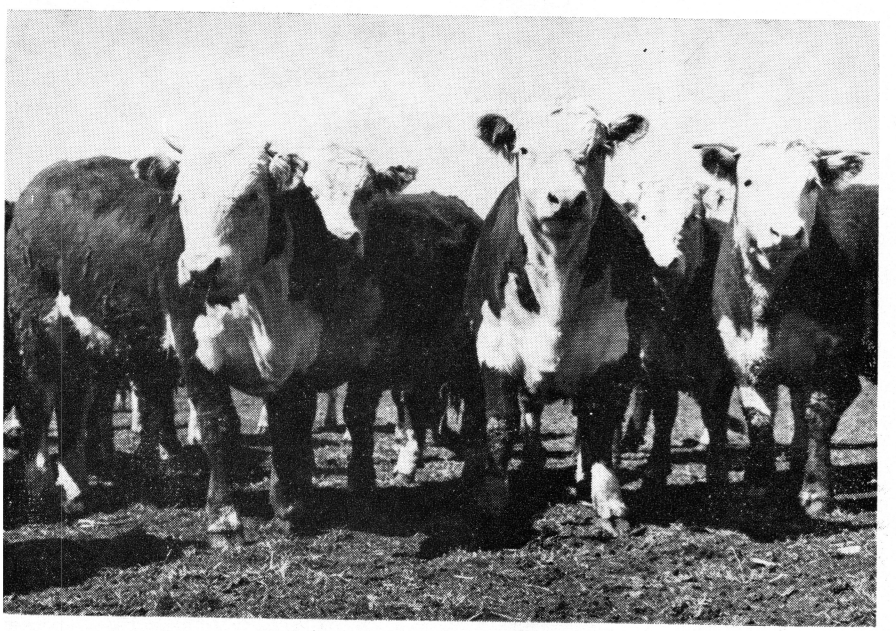
PLAIN OR CHOICE? CATTLE



Two ISU feeding tests show profit advantage for lower grade feeders when feeder price spread is wide. Lower grade feeders showed good growing ability, feedlot performance and high cutability.

by William G. Zmolek

EVERY FALL Iowa cattle feeders face the perennial question: "What kind of cattle should I buy?"

A cattleman is confronted with an overwhelming assortment of choices. Heifers or steers? Choice, good, medium or common? Calves, yearlings or two-year olds? Heavy or light?

Every cattleman wants the type of animal that will convert feed into beef efficiently, is marketable at a young age, and yields a large quantity of the quality beef demanded by consumers. But other considerations also influence a cattleman's choice — feed supplies, price spread, length of feeding period and pride of ownership.

Traditionally there is a large purchase price spread between plain and choice feeder cattle because of the assumption that the choice cattle, when finished, will return a high enough market value to deserve the higher initial purchase price. However, the subject of grade and quality is being seriously discussed in cattle feeding circles. Why? I can offer five possible reasons:

1. The demand for feeder cattle, regardless of type and quality, exceeds the supply. Before World War II 30 percent of the slaughter cattle were grain fed cattle; today 60 percent are grain fed.

2. The commercial feed lots of the West and Southwest, whose recent expansion offers great competition to the Corn Belt feeder, tend to favor the plainer grade animal.

3. Gaining ability of the plain animal equals that of the choice.

4. The demand for carcasses with less trimmable fat is increasing. The plainer animal tends to have less trimmable fat.

5. In the feeder cattle market plain feeders can often be purchased $5 to $7 below the price of the high quality feeders. In the slaughter market the spread has been of the order of $2 to $4 when the cattle are finished. This wide feeder price spread is the major factor favoring the plainer animal.

Our research in 1962 and 1963 was concerned with the question of

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TABLE 1. Feedlot Performance, Carcass Measurements and Financial Values of Different Grades of Yearling Feeder Cattle Fed a Heavy Corn Finishing Ration for 160 Days.

160 days on feed	Choice feeders	Good feeders	Medium feeders	Common Holsteins	Common B. Swiss
	Feedlot Performance				
No. of cattle	12	12	12	23	12
Av. Initial wt., lb.	794	732	743	830	741
Av. final wt., lb.	1270	1183	1151	1334	1227
Av. daily gain, lb.	2.98	2.82	2.55	3.16	3.04
Av. daily ration, lb.*	25.5	25.5	25.5	25.5	25.5
Feed/cwt. gain, lb.*	856	904	1000	807	839
	Carcass Measurements				
Dressing percentage	60.7	60.2	58.7	57.9	57.8
Prime Carcasses	.....	1	1	1	.....
Choice carcasses	8	9	9	8	4
Good carcasses	4	2	2	12	7
Standard carcasses	.....	.....	.....	2	1
Av. carcass grade	Low choice	Av. choice	Av. choice	High good	High good
Ribeye/cwt. carcass, in.	1.8	1.8	1.8	1.7	1.9
Fat cover/cwt. carcass, in.	0.06	0.06	0.05	0.03	0.03
	Financial Values				
Purchase price/lb. into lots	26.6c	23.5c	22.0c	20.9c	20.2c
Feed cost gain + 3c lb.*	18.8c	19.7c	21.5c	18.0c	18.5c
Break-even selling price/cwt.	$23.70	$22.03	$21.81	$19.81	$19.53
Grade + yield selling price/cwt.	$21.85	$22.20	$21.51	$20.47	$20.18
Profit or loss per steer	Loss $23.50	Profit $ 0.23	Loss $ 3.45	Profit $ 8.80	Profit $ 6.18

*Estimated on the basis that each steer consumed the average amount of feed consumed by all steers in the five groups.

feedlot performance and carcass evaluations. A 1964-65 trial, in progress, appears to support the first two year's results.

Trial One . . .

The first trial was conducted in 1962.

Cattle purchased. Seventy-two yearling steers weighing around 775 each and representing choice, good, medium and common feeder grades were purchased in late September. The common steers were predominately of Holstein or Brown Swiss breeding, while the medium, good and choice-grade steers were principally Angus and Hereford breeding.

Feeding procedure. The steers were fed a full feed of 23.5 pounds ground ear corn and 2 pounds of supplement per animal per day during the 160-day finishing period. The supplement composition was soybean oil meal 77.5%, dried molasses 7.5%, urea 5.0%, dicalcium phosphate 3.1%, limestone 5.0%, trace mineral premix 0.4%, vitamin A premix 0.5%, and stilbestrol premix 1.0%. Stilbestrol was supplied at the rate of 20 milligrams and vitamin A at 28,000 International Units per animal per day.

The cattle were fed in 12 pens, each pen containing one choice, one good, one medium and three common steers.

Feedlot performance. Total feed consumption was recorded for each of the 12 pens of cattle assuming that each animal, irrespective of his feeder grade, consumed the same amount of feed. However, this assumption may have been in error as a second trial designed to measure feed consumption by feeder grade, indicated that the lower grading animals consumed slightly more feed per hundredweight live gain.

Feedlot performance was excellent. Corn consumption averaged 54 bushels per steer during the 160-day feeding period. Liveweight gains were rather similar in the choice and common grades, averaging just over 3 pounds per animal per day. The good-grade feeders averaged somewhat less (2.82 lb.) with the medium-grade feeders making the poorest liveweight gain (2.55 lb.). Feed cost of gain ranged from 15 cents to 18.5 per pound. But an overhead charge to cover death losses and other expenses added 3 cents per pound of gain to give 18 cents to 21.5 cents per pound of gain as the total costs.

Carcass characteristics. The spread in carcass grade of the finished cattle was much less than the spread in feeder grade. Choice feeder-grade cattle averaged low choice as finished cattle. The good feeder-grade cattle went up a full grade to average choice at slaughter. The medium-grade feeder cattle averaged two full grades higher (average choice) as finished cattle. And all common-grade feeder cattle averaged two full grades higher (average good) as finished cattle. The four initial feeder grades thus narrowed to less than one slaughter grade at the termination of the feeder period (figure 1).

Production costs. The cattle were sold on a competitive live-

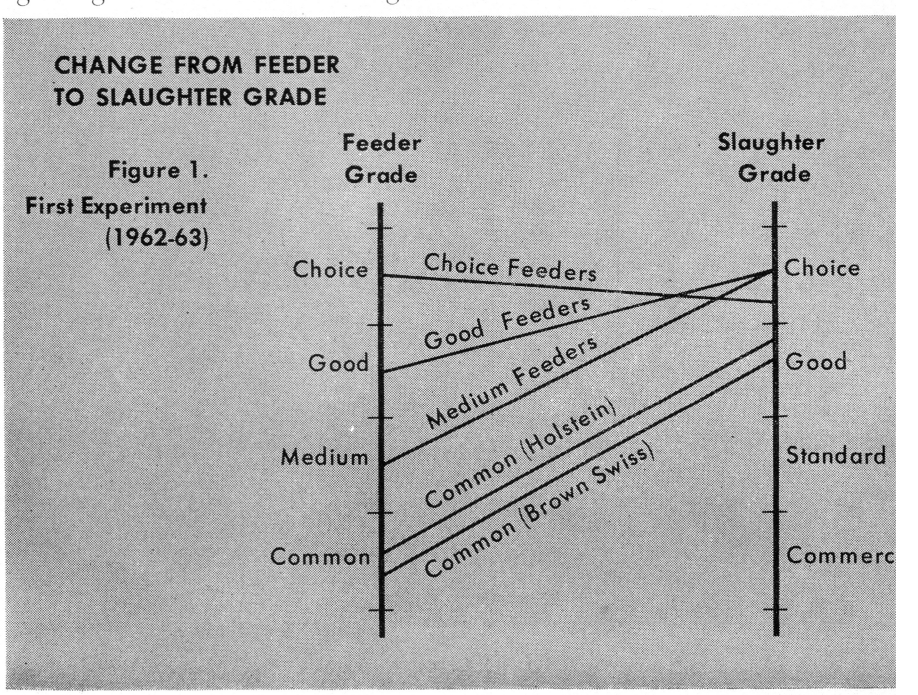

Figure 1. First Experiment (1962-63)

weight bid basis for an average of $21.30 per hundredweight. The shipping cost to market was 20 cents making the net selling price $21.10 per hundred. Bids were also taken on a grade and yield basis. Price spreads were unsually narrow with choice-grading cattle worth only about $1.50 more per hundred liveweight than cattle grading good. Grade and yield selling prices, based on the current carcass price, were used to compute the financial returns and to make comparisons with returns based on a live bid price.

Financial return per steer for the different groups of cattle was determined by subtracting from the grade and yield selling price the original cost of the cattle and their feed and overhead costs during the feeding period. These values are listed in table 1.

The break-even selling price required was lowest with the common feeder grade (19.5 cents a pound) and highest with the choice feeder grade (23.7 cents), with intermediate break-even prices for the intermediate feeder grades of cattle. These differences were due almost entirely to differences in purchase prices of the different grades of cattle. The choice-grade feeders cost about 6 cents more per pound than the common-grade feeders.

The actual selling price spread for the four feeder grades of cattle was $2.02 per hundred liveweight.

The common-grade feeder cattle in this experiment were more profitable, averaging about $7.50 profit per steer, than the higher grades of feeder cattle. The good-grade cattle barely broke even, showing a profit of only 23 cents per head, whereas the medium and choice-grade feeders showed losses of about $3.50 and $23.50, respectively, per steer.

How would returns have compared if there has been a $3 per hundred price spread between choice and good *slaughter* grades instead of the relatively narrow $1.50 spread? The higher financial return to the common grade feeders would have been decreased by approximately $12 per steer.

With a *slaughter* price spread of about $3 a hundred between choice and good, a feeder cattle spread of $3.60 a hundred between choice and common would have made each feeder grade equally profitable.

How would returns have been affected if the price spread between choice and common *feeders* had been 2 cents a pound instead of the actual 6 cents? Then common grade feeders would have lost their advantage — even with the narrow slaughter price of $1.50.

TABLE 2. Determination of feedlot performance, economic returns and carcass evaluation of four feeder grades of yearling steers.
(Conducted 9-26-63 to 4-11-64 at Beef Nutrition Farm, Iowa State University, Ames)

Cattle fed 198 days market to market 18 head per group	Feeder grade			
	Choice	Good	Medium	Common
Feedlot Performance				
Purchase wt. 9-26-63 at Sioux City, lb.	762	763	760	824
Slaughter wt. 4-11-64 at Des Moines, lb.	1255	1292	1258	1359
Av. daily gain market to market, lb.	2.49	2.67	2.52	2.70
Av. daily gain without marketing shrinks, lb.	2.79	2.97	2.82	3.00
Feed consumed/steer/day, lb.[1]	21.9	23.0	22.2	24.6
Feed required/100 lb. gain, lb.	879	861	881	911
Carcass Measurements				
Av. carcass wt. (hot shrunk 2½%), lb.	776	793	757	800
Dressing percent	61.8	61.4	60.2	58.9
Federal carcass grade	L.CH.	L.CH.	L.CH.	Av. Good
Ribeye area, 1 cwt carcass (sq. inches)	1.5	1.5	1.5	1.5
Fat cover 1 cwt carcass (inches)	.09	.09	.06	.02
Predicted retail yield of carcass, %	67.1	66.6	68.7	71.4
Financial Values				
Cost per steer				
Original cost into Ames lots	$190.50	$179.30	$168.72	$158.21
Feedlot costs (feed + 3c/lb. gain)	97.61	102.16	98.60	109.68
Shipping costs to packing plant	2.51	2.58	2.52	2.72
Total to packing plant	290.62	285.04	269.84	270.61
Purchase price/lb. delivered to Ames	25.0c	23.5c	22.2c	19.2c
Feed cost + 3c overhead/lb. gain	19.8c	19.5c	19.8c	20.5c
Shipping cost/lb. to packing plant	0.2c	0.2c	0.2c	0.2c
Breakeven price/lb. at packing plant	23.2c	22.1c	21.4c	19.9c

[1]Feed consumed included mixed hay — 5.0 lb. and supplement — 1.0 lb. per steer per day plus balance of ration — rolled shelled corn. Feed prices assigned: corn — $1.12 bu., hay — $20.00 ton and supplement — $100.00 ton.

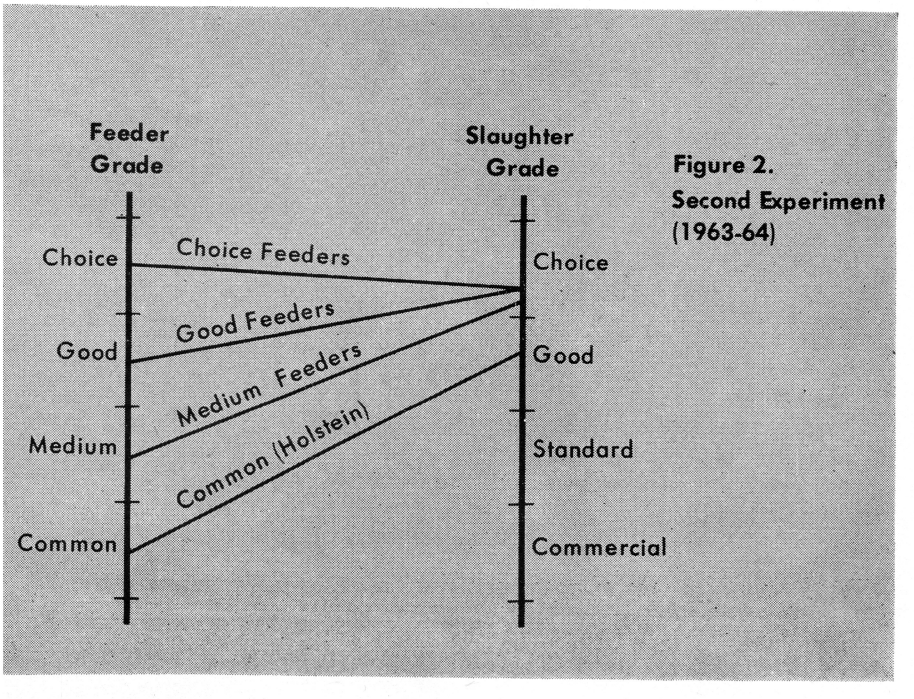

Figure 2. Second Experiment (1963-64)

Trial Two . . .

The second trial was run in 1963.

Cattle purchased. In late September of 1963 four separate groups of cattle representing choice, good, medium, and common feeder grades were purchased. Hereford breeding dominated in the choice and good grade groups, mixed breeding prevailed in the medium grade group, and Holstein breeding was predominant in the common grade group.

The average weight per steer and price paid per hundredweight delivered to our experimental lots were: choice — 762 pounds, $25.00; good — 763 pounds, $23.50; me-

dium – 760 pounds, $22.25; and common – 824 pounds, $19.25. These weights were similar to those of the cattle fed the previous year. The prices averaged about $1 under those of a year earlier. However, the spread of $5.75 per hundredweight between the lower and higher grade feeders did not differ greatly from the $6.50 per hundredweight of the previous year.

Feeding procedure. The cattle were fed in pens of six animals each with only one feeder grade being placed in a given pen. This permitted the measurement of feed consumption by the different feeder grade groups.

The ration fed consisted of a full feed of rolled shelled corn, 5 pounds of mixed hay and 1 pound of supplement per animal per day. Corn consumption was highest in the common feeder grade pens, 15.9 pounds per steer per day.

The supplement composition, in percentage, was soybean oil meal, 80.2; urea, 6.7; dicalcium phosphate, 7.0; limestone, 3.6; trace mineral premix, 0.5; and stilbestrol premix, 2.0. Stilbestrol was supplied at the rate of 20 milligrams per animal per day.

All four groups of cattle were fed for 198 days – 180 days on full feed and about 18 days in bringing the cattle up to full feed.

Feedlot performance. Excellent and approximately similar feedlot performances were obtained with all four groups of feeder cattle (table 2). The common feeders consumed slightly more feed and gained more liveweight (3 pounds per animal per day) than any other feeder group. Conversely, choice cattle consumed slightly less feed and made slightly less liveweight gains – 2.79 pounds per animal per day – than other feeders.

Feed conversion differences and feed costs of gains among groups were small and did not fit any general pattern. These overall feedlot results are similar to those of trial one. Both trials indicated that plainer cattle perform as well in the feedlot as higher quality feeder cattle.

Carcass characteristics. Slaughter grades were similar to the cattle fed in 1962. The three higher feeder grades averaged low choice and the lowest feeder grade averaged good (figure 2). In general, the lower the feeder grade of cattle at the beginning of the feeding period, the greater the change in grade by the end of the feeding period.

Dressing percentage favored the higher feeder grades of cattle, averaging as follows: choice, 61.8; good, 61.4; medium, 60.2, and common, 58.9. This agrees with our first trial in which choice feeders averaged 60.7 and common feeders averaged 57.9. These dressing percent differences are not well understood. They are probably due to the overall fatness of the animals since fat thickness measured over the 12th rib was highest in the choice animals, 0.7 inch, and lowest in the common animals, 0.2 inch. The breed of animal may also exert some influence on dressing percentage

The retail cutout yield of the carcasses as predicted by measurement of the wholesale round favored the two lower feeder grades – 48.1% and 53.2% – compared with the two higher grades – 47.9% and 46.2%. This favorableness appeared to be related to the ratio of fat to lean in the carcasses produced from the experiment. This advantage was more than sufficient to overcome the lower dressing percent values (table 2).

Production costs. The details of the production costs of the finished live animals in the different feeder grade groups are tabulated in table 2 as (1) feeder cattle purchase costs, (2) feedlot costs including feed and overhead and (3) shipping costs to market.

Totaling these costs and dividing by the liveweight of the animals gave breakeven production costs per hundredweight delivered to the packing house as follows: choice, $23.20; good, $22.10; medium, $21.40; and common, $19.90. Thus production costs of the lowest grade feeders were substantially less than those of the highest grade feeders. *These differences were entirely due to the lower purchase prices of the lower feeder grades.*

Conclusions . . .

Based on two years of research study the following conclusions can be made:

1. Plainer grade cattle can be fed into U. S. good grade if placed on a full feed of grain and fed in the manner that higher grade feeder cattle are usually fed – 180 to 200 days.

2. Plainer grades of cattle dress 3 percent lower than higher grades.

3. Plainer grades of cattle gain equally well in the feedlot as compared to choice and fancy grade feeders. This is not surprising since the beef cattle industry has not seriously selected cattle for gain performance. However, in recent years some performance testing is being practiced and some progress is being made.

4. Plainer yearling cattle, fed a high grain ration for 160 to 180 days, have less outside or trimmable fat than do the choice grade cattle. The net result is that their carcasses yield as high or higher percentage of retail meat.

5. There is no reason to believe that beef produced by the plainer grades is any less desirable than produced by the higher grade feeders if slaughtered at equal grades.

6. High grade feeder cattle will reach choice slaughter grade in a shorter feeding period than will the lower grades.

Do the results of these studies mean that cattlemen should shift their efforts to the production of medium and common grade cattle? By all means *no*.

In the feedlot these lower grades of feeders are profitable *only* if they can be purchased at prices substantially under choice grade feeder cattle. A feeder calf producer would be ill-advised to invest his capital and efforts in the production of an animal that sells at less than potential top price.

However, the high cutability, growing ability, and feedlot performance of the lower grading cattle, shown in these studies, can no longer be ignored. These facts present a very real challenge to the beef industry to improve gain performance and carcass desirability of their cattle. Selection of breeding stock on show ring winning alone isn't enough to get the job done. This method of selection must be tied to performance testing and carcass evaluations.